REMARKS

Fees for this response

The total number of claims in the case after this amendment is 15, of which only claim 1 is are in independent form. No fee is believed to be required with this response.

Support for the new claims

Support for new claims 11 and 12 is found at page 5 lines 25-26 of the specification.

Support for new claim 13 is found at page 11, the second full paragraph, where the concept of conformality is explained in some detail.

Support for claim 14 is found at page 12 lines 4-7 of the specification.

Support for the new process claim 15 is found at page 6 *et seq.* (the particle coating process of step a), at pages 4-6 (forming the particle matrix, step b), and in the paragraph bridging pages 12 and 13 of the specification (attachment of electrodes, step c).

Regarding the §102(b) rejection over Hyatt et al. (U.S. 4,726,991)

The applied reference is discussed in the background statement of this application. As is discussed there, the Hyatt et al. patent generally describes the concept of using a particle coating to create an optimum spacing of conductive particles in a particle matrix. A problem with the Hyatt et al. reference is that it does not describe any workable way of accomplishing this goal.

Hyatt et al. propose two mechanisms for creating a nonconductive coating on the conductive particles. One method is to incorporate other particles, of a nonconductive material, into the matrix. The idea apparently is that the nonconductive particles would become extremely well distributed throughout the matrix, so that they form an essentially complete coating about the conductive particles. In addition, the distribution of particles would be such that the thickness of this coating is constant about each particle. Hyatt et al. seem to assume that these various types of particles would somehow arrange themselves in a highly ordered way during the process of mixing them together to form the particle matrix. That this would occur would be rather remarkable, given that the particle distribution within the matrix would be expected to be random. It is very telling that Hyatt et al. apparently never actually made such a particle matrix—the data reported in his Figures 3, 4 and 5 was generated using particles which are uncoated (see column 7 lines

18-32 with respect to Fig. 3) or undefined (Figs. 4 and 5—see column 9 lines 1-12 and column 9 line 31 to column 6 line 19).

The other mechanism that Hyatt proposes for coating the particles is to expose them to oxygen in order to create an outer oxide coating. *See* column 7 lines 42-50. However, Hyatt does not explain how or whether such an approach is in fact capable of forming a film of needed thickness on the surface of the conductive particles. Hyatt et al. describe no conditions for accomplishing this, nor does the reference include any examples showing how such an approach would work. This proposed mechanism appears to be no more than the patentees' best guess as to how the coated particles might be made. Hyatt et al. is plainly a paper patent, at least as far the idea of using coated conductive particles is concerned. (This is equally the case with regard to his coated semiconductor particles, as well.)

Hyatt et al. do not propose an atomic layer deposition process as a route to making the coated conductive particles, and so fails to anticipate the present claims. Although the examiner has not given any weight to the limitation in the current claims, that the conductive particles are coated via an atomic layer deposition process, the applicants consider that limitation to be significant in both defining their invention and distinguishing over Hyatt et al. The atomic layer deposition process provides the conductive particles with a coating as defined in claim 1, which not only is a specific thickness but also covers the entire surface of the particles. Both of these conditions are believed necessary to obtain the intended effect of the invention.

Some of the independent claims deserve particular mention. Claim 9 specifies that the core particle is iron, nickel or gold and that the nonconductive coating is Al_2O_3 or SiO_2. Such particles cannot be formed through an oxidation process as suggested by Hyatt et al., as the coatings specified in claim 9 are not oxidation products of the underlying particle.

Claims 3, 11 and 12 specify, in various ways, that a high proportion of conductive particles are present in the particle matrix. Hyatt et al. actually teach away from this at column 7 lines 29-32. Hyatt et al. require a large proportion of the semiconductive particles in order to prevent a large decrease in clamping voltage.

Claim 13 specifies that the nonconductive coating is conformal. This is believed to be impossible to achieve using a mixture of conductive and nonconductive particles as suggested by Hyatt et al.

Claim 15 is a process claim which is not anticipated by Hyatt et al. for at least the reason that in step a, the claim requires that the particles be coated via an atomic layer deposition process.

For these reasons, a timely notice of allowance is respectfully requested. The undersigned is available by telephone if a call would advance prosecution.

Respectfully submitted,
GARY C. COHN PLLC

Gary C. Cohn
Registration No. 30,456
Phone: (215) 931-0372
1147 N. 4th St., Unit 6E
Philadelphia, PA 19123